CLAIMS

1. A secondary battery comprising a cathode active material having an average discharge potential of 4.5 V or more with respect to Li metal and an electrolyte, wherein the electrolyte includes a high-permittivity solvent having a dielectric constant of 40 or more and another solvent which is at least one of dimethyl carbonate and ethylmethyl carbonate.

2. The secondary battery as defined in claim 1 further comprising an anode active material containing amorphous carbon.

3. The secondary battery as defined in claim 1, wherein a volume ratio of the high-permittivity solvent with respect to the electrolyte is in a range from 10 to 70 %.

4. The secondary battery as defined in claim 1, wherein the high-permittivity solvent is ethylene carbonate or propylene carbonate.

5. The secondary battery as defined in claim 1, wherein the cathode active material is spinel-type lithium-manganese composite oxide.

6. The secondary battery as defined in claim 5, wherein the spinel-type lithium-manganese composite oxide is represented by the following general formula (I)

$$Li_a (Ni_xMn_{2-x-y}M_y) (O_{4-w}Z_w) \quad (I)$$

wherein $0.4<x<0.6$, $0 \leqq y$, $0 \leqq z$, $x+y<2$, $0 \leqq w \leqq 1$ and $0 \leqq a \leqq 1.2$ are satisfied; M is at least one metal selected from the group consisting of Li, Al, Mg, Ti, Si and Ge, and Z is at least one of F and Cl.

7. The secondary battery as defined in claim 6, wherein the "y" in the general formula (I) satisfies a relation of $0<y$.

8. The secondary battery as defined in claim 6, wherein the "w" in the general formula (I) satisfies a relation of $0<w \leqq 1$.